

The Rainstick

Summary:

Students build a rainstick out of materials in their own environment and like people of ancient cultures, imitate the sound of rain.

Objectives:

Students will:

- Relate the sound produced by an instrument to the type and quantity of materials used in its construction.
- Recognize how other cultures create rainsticks from materials found within their own environments.
- Imitate the sound of rain with various materials.

Materials:

- Tape recordings of nature sounds, including rainfall.
- Simple instruments. (e.g. rattles and bells)
- An actual rainstick. (Optional)
- A pre-made rainstick with removable ends.
- Copies of *Build Your Own Rainstick*
- Goggles

Materials for making rainsticks:

- Cardboard tubes of a variety of widths and lengths – from toilet paper, paper towels, gift-wrapping, or mail tubes. If these tubes have caps on the ends, save them to seal the tube. Otherwise, use masking tape. (One-inch [2.5 cm] diameter tubes are sturdy and do not require a large quantity of fill. Paper and mailing supply companies carry tubes.)
- A tool to make holes in the tube. (If using a drill, select a bit that creates a hole into which a toothpick fits snugly. An awl may be used to punch holes in the tube.)
- Toothpicks or other similar thin pieces of material. (Flat-head nails may also be used. With a 1-inch diameter tube, use a 7/8-inch [2.2 cm] nail.)
- Wood glue.
- Scissors or wire cutters.
- Masking tape.
- A large quantity (at least a cup [240 ml] per student) of dry seeds, beans, pebbles, rice, macaroni, beads, etc.
- Funnels (optional)
- A variety of materials for decorating the tubes: sand, leaves, twine, yarn, shells, dried herbs, etc.
- Watercolor paints and brushes.
- Pictures of rain forest and/or desert communities.

Making Connections:

Students may be aware of rhythm – or sound – producing instruments, such as drums, wooden, flutes, or rattles, that imitate natural sounds. Through, *National Geographic* magazine, Discover programs, and other media, students may already have made the connection that diverse cultures produce these instruments from elements available within their own environments. Experiencing how ancient cultures developed instruments to imitate the sound of rain encourages students to explore their own perception of water more closely.

Background:

The rainstick is a type of tubular rattle, a sound-producing instrument that belonged to the earliest cultures. Throughout time, the rainstick has been used by diverse cultures in various ways. It has served ceremonial purposes and has been made and played by children. People continue to use the rainstick today. In some parts of the world it has cultural meaning as a traditional instrument associated with the onset of rain, and in other places it is simply played as a percussion instrument.

The rainstick is a hollow tube with an unusual internal structure. An interior matrix formed of cactus spines, wooden pegs, bamboo, or palm silver distinguishes the rainstick from other tube rattles. The cylinder is filled with pebbles, hard seeds, beans, sand, rice, or tiny shells. The rattle may be decorated with paint and feathers or sheathed with woven cover.

The rainstick is a product of the environment in which it is found. Rain forest people create rainsticks from bamboo or the midrib of a rapra palm frond. A section of the center stem is cut from the palm frond, split length wise, and hollowed out. Material is left at each end of the tube so that the ends are closed. The tube is filled with rice and fastened together with palm silvers.

The palm rainstick imitates the timbre of rain in the forest. Grains of rice tapping against each other, the silvers, and the sides of the tube create the muted sounds of raindrops on ferns, leaves, and the damp forest floor. In desert communities, rainsticks have been constructed from various species of cactus.

The material from which the tube is constructed, its length and circumference, the tiny objects enclosed, and the position of the internal needles determine the sound produced by a rainstick. The needles or pegs may bisect the tube or only extend halfway through, like the spokes in a wheel.

The way in which the rainstick is “played” affects its sound. Sometimes the tube is shaken like a rhythm instrument. The angle at which the stick is held determines not only the quality but also the duration of the sound.

Some musicologists believe that the rainstick evolved in different parts of the world at the same time. A tubular rattle with pegs has been found in Northern China. However, other investigators maintain that the rainstick was developed in West Africa and introduced to other areas, such as South America, where it is also found today.

Procedure:

- ***Warm Up:***

Ask students to list sounds from the natural environment. Have them listen to music that incorporates these sounds. Guide students to understand that many

musical instruments were designed to imitate natural sounds. Have simple instruments on display (e.g. gourd, baby rattle, bell, mouth harp, drum, wooden whistle, or flute.) Discuss how these are made and the sounds that they produce.

- ***The Activity:***

1. Play the rainstick. Ask students what sounds in nature they think the instrument imitates and compare it to recordings of rain. Another approach is to tell a story about rain or read *The Rainstick, A Fable* and demonstrate the rainstick.
2. Discuss the use of the rainstick. Ask students how ancient cultures might have used the rainstick (for ceremonial reasons to celebrate the rain, for musical accompaniment, for children's toys.)
3. Ask students to hypothesize how the rainstick is constructed and what materials were used to make it. How would using different fill materials affect the sound? Using a pre-made rainstick with ends that open, ask students to predict the sound before you add new material. Test their predictions. Have students suggest other materials from their environment that could be used to make rainsticks. Have them speculate what materials ancient people in rain forest or desert communities might have used. (Show pictures of these communities for clues.)
4. Explain and demonstrate how to design a rainstick. Have students build their own rainsticks. (See *Build Your Own Rainstick*.)

NOTE:

Depending on time and student's skills levels, drilling can be done in advance or as part of the activity. If done during class time, adults or responsible students can supervise the drilling at specified workstations. Students can plan how to decorate the rainsticks or write stories or poems about rain while waiting for their sticks to be drilled.

Students with drilled sticks can begin the next step. If they use nails, drilling holes is not necessary.

For hearing-impaired students, larger fill material may be used so that the vibrations can be felt. You may obtain clear PVC pipe from a hardware store and get the school shop to drill holes.

- ***Wrap Up:***

Have students compare the sounds produced by their rainsticks. Challenge students to arrange their rainsticks in order from a light to a heavy rain. Have them perform a rainstick medley. Discuss how the sound of rain affects people differently. A gentle rain might create a sense of comfort and well being, whereas a violent storm can evoke fear and anxiety.

Assessment:

Have students:

- Predict the sound a rainstick will produce based on its construction and fill materials (step 3).

- Speculate about the materials that cultures of diverse environments might have used to create rainsticks (step 3).
 - Build a rainstick (step 4).
 - Arrange a rainsticks on a sound scale (Wrap up).
- Upon completing the activity, for further assessment have students:
- Express the personal significance or special meaning of their rainsticks.

Extensions:

A rainstick can be a type of journal. Students may decorate rainsticks with items that have personal significance. On a field trip students may create a “natural journey” by collecting material and decorating their rainsticks. They may also design rainsticks that reflect particular environments (e.g., an ocean rainstick or a forest rainstick). Caution students to collect materials only where such activity is allowed. Also, feathers should not be collected because of legal restrictions involving most bird species.

This instrument may be used to study sound. Students can investigate how the rainstick’s sound varies by changing: the diameter of the tube; the length of the tube; the spacing of the internal pegs; the weight of fill material (a heavy substance like corn compared to a lighter material like rice); or the outer coating of the tube.

Build Your Own Rainstick:

- ***What You’ll Need:***
 1. Cardboard tubes from paper towels, gift-wrapping, or mailing tubes.
 2. A tool to punch holes in the tube, such as a drill or awl.
 3. Small hammer.
 4. Toothpicks or flat-head nails. (1-inch diameter tube, 7/8 inch nail)
 5. Glue.
 6. Masking tape.
 7. Wire cutters or sturdy scissors.
 8. “Fill” seeds, pebbles, rice, dried beans, shells, beads, and so forth.
 9. Materials to decorate the outside of the tube: paint, crayons, sparkles, sand, etc.

- ***The Steps:***
 - 1.
 - 2.
 - 3.
 4. Seal one end of the tube with masking tape. Pour in the fill. Cover the open end of the tube with your hand and invert it. Close your eyes and listen. Add more fill or take some away to create a sound that is pleasing to you. Cover the other end of the tube with masking tape.
 5. You may wish to decorate your rainstick by coating it with glue and rolling it in sand. (Messy, but it provides a wonderful texture for the surface of your instrument.) After it dries, you may paint and decorate it

with natural objects from your own part of the world. Be creative! When you slowly turn your rainstick end to end, listen for the sound of rain.